mic branches, in which the neuroglic fibers are not completely separated from the protoplasm, but are in continuity with it, or even passing through it. The fibers usually follow the course of the protoplasmic branches of the cells. JELLIFFE.

TETANY. SANGER BROWN (Med. News, July 5, 1902).

In the discussion of this subject this author mentions as frequent causes of tetany, thyroid deprivation, due to disease or surgical interference, gastrointestinal disorders, such as diarrhea and constipation, sometimes acute infections, or in women pregnancy and lactation. Sometimes hysteria and epilepsy are found in connection with tetany. Young adults are most subject to this affection and as yet no post-mortem examination has led to any clear comprehension of the nature of the disease. It is always marked by the occurrence of spasms, which usually decrease during sleep. These spasms are nearly always symmetrical, but variable in distribution, and the electrical excitation of both nerves and muscles is greatly increased. Such sensory phenomena as tingling or burning may be present, as well as vasomotor and trophic phenomena, such as edema of the parts of the location of the spasm, as cloudiness of the lens has been observed in some instances. The diagnosis is not difficult in typical cases. The duration of the disease varies from a few hours to months. With the exception of thyroid and pregnancy cases no specific has yet been discovered, and in cases resulting from extirpation or atrophy of the thyroid the treatment is obvious. The presence of a physician is necessary when it is imperative to employ sedatives and antispasmodics sufficient to subdue any violent paroxysm. The general characteristics of the disease are tonic spasms, either paroxysmal or continuous, and ordinarily symmetrical. These spasms are generally limited to the hands and feet, but in severe cases may be more extended. When sensory and general symptoms are present they are almost invariably distinctly subordinate. W. B. NOYES.

FATIGUE IN NON-MEDULLATED NERVES. T. G. BRODIE AND W. D. HALLIBURTON (Jour. Physiol., May 28, 1902).

It has been demonstrated by Waller that while nerve activity is going on there is an increase in the action current, somewhat like that caused by small doses of carbolic acid, and by this he infers that this substance is produced during the passage of the nerve impulse, resulting from the destructive changes in the substances which make up the fatty sheath. He is of the opinion that the gray axis in action both lays down and uses up its own fatty sheath, the process of nutrition following destruction so quickly that the evidence of fatigue cannot be demonstrated. These authors, assuming this to be the case, showed that it would be possible to show evidence of fatigue in non-medullated fibers, and those of the spleen were selected for experiment. The result of a stimulation of these fibers by an electric current was a contraction of the spleen, the volume of which was measured by an oncometer. Water, slightly above the freezing point, was passed through a tube, placed between the electrodes and the spleen, with the nerve resting upon it. The cold prevents the nerve impulses from entering the spleen, acting as a block. After the nerve had been stimulated for many hours the block was removed. When the nerve was again stimulated the contraction of the spleen was quite as vigorous as before the long-continued stimulation, which showed that the non-medullated nerve fibers of the spleen evinced no apparent evidences of fatigue. The authors believe that the "stimulation fatigue" referred to by Howell and others, is the result of polarization of the nerve after prolonged faradization and that an extended rest must not necessarily precede re-stimulation. Although peripheral fatigue of the nerve-terminals may be readily induced in the spleen it does not nullify the results of these experiments. Stimulative fatigue can be induced in vasomotor nerves, but not in the nerves of the spleen. The transmission of nerve impulses is not barred by stimulation fatigue.

JELLIFFE.

PLEA FOR SIMPLER MEDICINAL TREATMENT OF CHRONIC NERVOUS DISEASE. JOSEPH COLLINS (Med. News, July 5, 1902).

This writer believes in the proper use of medicine, but calls attention to its frequent abuse. He is of the opinion that in many cases, such as neurasthenia, drugs should only be used to fulfil some pointed indication and substitutes for them exercise, rest, diet, conformation to the rules of health, avoidance of deleterious influences, with massage and hydrotherapy. Epilepsy is best treated by avoiding those experiences which have been shown to precipitate attacks, and putting the system in such a condition that the excitants of epileptic seizures, such as fatigue, autointoxications from the gastrointestinal tract and poisonous products, may be stayed by dieting, attention to the best hygenic measures, massage, suspension, electricity and hydrotherapy, and the patient should be assured that by attention to these measures the approach of incapacity which must eventually overtake him may be retarded for an extended period.

W. B. NOYES.

NEUROSES AS SEEN IN ORTHOPEDIC PRACTICE. B. E. MCKENZIE, M.D. (N. Y. Med. Jour., July 13, 1902).

Orthopedic practice includes many neuroses of the spine, where no changes in the central or peripheral nerve structures can be discovered. The neurosis may not be the only, and possibly not the chief disease present. After treating any abnormal condition the writer finds that discipline which educates the patient to be self-reliant must be enforced, and systematic gymnastic exercise carried on. The writer's cases present a large variety of these conditions. *Case I*, complaining of pain in the back and head, and inability to exert herself for many months, was cured by isolation from her family and systematic gymnastics. *Case II*, suffering for several years from backache, and symptoms of hip disease, was cured in a short time by gymnasium training, the entire trouble being hysteria. Other cases presented symptoms resembling Pott's disease, multiple neuritis with severe contractures, lateral curvature of the spine with great weakness, joint disease of various sorts. They all recovered under treatment isolating them from their families and instituting carefully selected physical exercises in a gymnasium under a competent instructor, preferably in classes. This treatment is a substitution or modification of the Weir Mitchell system of treatment.

W. B. NOYES.

THE CHANGES IN THE SPINAL CORD AND MEDULLA IN PERNICIOUS ANEMIA. FRANK BILLINGS, M.D. (Boston Med. and Surg. Jour., Aug. 28, 1902).

The writer discusses the characteristic changes in the spinal cord in pernicious anemia, and their resemblance to other conditions of diffuse degeneration. The cause of pernicious anemia is inferred to be toxemia, occurring after pregnancy, syphilis, malaria and fevers, as a rule associated with disorders of the digestive tract. The symptoms are chiefly due to the profound anemia. There are present nervous phenomena, usually subjective, and paresthesia, cerebral disturbance, fixation of the pupils and other nervous phenomena are observed. Spinal cord lesions,